Surflan® AS

Specialty Herbicide

A selective preemergence surface-applied herbicide for control of annual grasses and many broadleaf weeds in:

- **Landscape Ornamentals**
- **Container Grown Ornamentals**
- **Field Grown Ornamentals**
- **Drainage Areas Under Shadehouse Benches**
- **Ornamental Bulbs**
- **Ground Covers/Perennials**
- **Christmas Tree Plantations**
- **Non-bearing fruit and nut trees and non-bearing vineyards**
- **Noncropland and Industrial Sites**
- **Established Warm Season Turf (including Bahiagrass, Bermudagrass, Buffalograss, Centipedegrass, St. Augustinegrass and Zoysiagrass)**
- **Tall Fescue (warm season areas)**

Active Ingredient:	
oryzalin: 3,5-dinitro-N^4N^4-dipropylsulfanilamide	40.4%
Inert Ingredients	59.6%
Total	100.0%

Contains 4.0 pounds of active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the Rocky Mountain Poison Center 1-866-767-5089 for emergency medical treatment.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at the end of label booklet. If terms are unacceptable, return at once unopened.**

For chemical emergency: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

Shake Well Before Using
EPA Reg. No. 70506-44

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals

CAUTION PRECAUCION

Causes Eye Irritation • Prolonged or frequently repeated contact may cause allergic reactions in some individuals

Avoid contact with eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks
- Mixers and loaders must wear a chemical-resistant apron in addition to other PPE.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS STATEMENTS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours. **Exception:** If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Workers may enter treated areas without required PPE during the reentry interval following $^1/_2$ to 1 inch of rainfall or irrigation, if they are performing tasks that do not involve contact with the soil subsurface; otherwise, PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Keep all persons, children and pets out of treated area until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.
Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

Surflan AS Specialty herbicide is a preemergence surface-applied product for the control of many annual grasses and broadleaf weeds in ornamental plantings, bulbs, ground covers/perennials, established warm-season turfgrass, Christmas tree plantations, non-bearing trees and vines, and noncropland and industrial sites.

Surflan AS is orange in color and may cause temporary discoloration of sprayed surfaces. If this discoloration is undesirable, it may be altered by using a commercially available colorant such as Blazon or removed by spraying surface with water or washing with an industrial cleaner immediately after application. Surflan AS may also be applied with mulch colorants, such as Mulch Magic or Nu-Mulch.

Treatment of Plant Species Not Listed on the Label for Surflan AS
Users who wish to use Surflan AS on plant species not recommended on this label may determine the suitability for use by treating a small number of such plants at a recommended rate. Prior to treatment of larger areas, the treated plants should be observed for any sign of herbicidal injury during 30-60 days of normal growing conditions to determine if the treatment is non-injurious to the target plant species. The user assumes responsibility for any plant damage or other liability resulting from use of Surflan AS on plant species not recommended on this label.

Aerial Application: Do not aerially apply this product.

Chemigation: Do not apply this product through any type of irrigation system.

Do not graze or feed forage from treated areas to livestock.

Precaution: Avoid spray drift to non-target areas when applying Surflan AS. Spray drift may result in reduced emergence of non-target plants adjacent to the treated area. Poor weed control may result if directions are not followed. Over-application may result in crop injury or excessive soil residue.

APPLICATION

SOIL PREPARATION

Surflan AS controls weeds growing from seed. Surflan AS will not control emerged weeds. Surflan AS does not control established weeds, weeds growing from stolens, rhizomes, or root pieces. Therefore, areas to be treated should be free of emerged weeds. Weed residues, prunings, and trash should be thoroughly mixed into the soil or removed prior to treatment. In field applications, the soil should be in good tilth and free of clods at the time of application.

Ground Application: Apply Surflan AS as a directed spray to the soil surface or over the top of plants. Use only a properly calibrated, low-pressure, herbicide sprayer that will apply the spray uniformly. Use screens no finer than 50 mesh in nozzles and in-line strainers. Apply the appropriate rate of Surflan AS, as outlined in "Approved Uses" section of this label. In all cases, use sufficient water volume to obtain uniform coverage and deliver the desired rate of Surflan AS to the treated area. The volume of water used is not critical, as long as the desired rate of Surflan AS is delivered uniformly across the area treated. When calibrating, determine the volume of water delivered by the sprayer to a given area (1,000 sq ft, 1 acre, etc.). Then mix the desired rate of Surflan AS in the amount of water required to cover the entire area to be treated. As the amount of water used (spray volume) decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure proper calibration and uniform application. Maintain continuous agitation from mixing through application. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application.

Hand Held or Backpack Sprayer Application: The amount of water used to apply Surflan AS herbicide is not critical, but should be sufficient for uniform coverage of the target area. Calibrate by determining the volume of water required to treat 1000 square feet. Use this calibration volume to determine the amount of water and Surflan AS herbicide needed to treat the target area (see the following calibration example). **Note:** Sprayer calibration (volume of spray needed to treat 1,000 square feet) will vary with each individual operator.

Steps in Calibration:

1. Mark an area of 1,000 square feet (i.e. 20 by 50 feet, or 25 by 40 feet).
2. Place the sprayer on a level surface and add water noting the final level of water in the spray tank.
3. Spray the marked area with a sufficient volume of water to provide uniform coverage. Refill the sprayer to the same level as before measuring the amount of water added. The measured water added to the sprayer is the volume needed to cover 1,000 square feet.
4. Determine the application rate (fl oz/1000 sq ft) for Surflan AS from the "Approved Uses" section of this label.
5. To each volume of water used, as measured in step 3, add the amount of Surflan AS as determined in step 4.

Example: If the sprayer used 2 gallons of water to cover 1,000 square feet and the desired application rate of Surflan AS is 3 fluid oz/1,000 square feet, then you would add 3 fluid ounces of Surflan AS to every 2 gallons of water to be used.

MIXING DIRECTIONS

Shake Well Before Using

Precaution: Do not allow the spray mixture to siphon back into water source.

Surflan AS - Alone

Make sure spray tank is clean and use only clean water. Fill spray tank 1/2 - 3/4 full. Start agitation and add the required amount of Surflan AS. Continue agitation and finish filling the spray tank. Maintain continuous agitation until application is completed.

Surflan AS - Tank Mix Combinations

Prior to mixing, read and carefully follow all label instructions and precautions for each product added to the tank mixture. Vigorous, continuous agitation is required for all tank mixes of Surflan AS. Sparger pipe agitators generally provide the best agitation in spray tanks.

Mixing Order: Fill the tank 3/4 full with clean water. Start agitation and add different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: dry flowables (DF); wettable powders (WP); Surflan AS and other aqueous suspensions (AS), flowables (F), and liquids (L); solutions (S); and emulsifiable concentrates (EC).

Continue agitation and finish filling the spray tank with clean water. Maintain agitation until application is completed. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be completely resuspended before spraying is continued. A sparger agitator is particularly useful for this purpose.

Premixing: When tank mixing, initial mixing and dispersion of certain dry flowable or wettable powder products may be improved by premixing with water (slurrying). Adding the slurried material to the spray tank through a wetting screen of 20 or 35 mesh will help assure good initial dispersion.

Equipment Cleaning

If a buildup of material occurs on the walls of the spray tank, it should be removed between fillings by washing with soap and water and rinsing thoroughly. Tanks, lines, screens, and nozzles should be cleaned thoroughly after each use.

Activation and Cultivation

Surflan AS will remain stable on the soil surface up to 21 days following application. In the absence of timely rainfall, irrigation can be used to activate Surflan AS. A minimum of one-half (1/2) inch of rain or its equivalent in sprinkler irrigation is necessary to activate Surflan AS. If weeds begin to emerge due to lack of rainfall or irrigation, shallow cultivate 1-2 inches deep to destroy existing weeds, or remove them by hand. Shallow cultivation to a depth of 1-2 inches will enhance herbicidal effectiveness. Erratic weed control may result if Surflan AS is not activated by rainfall, irrigation, or cultivation within 21 days of application, or existing weeds have not been removed.

WEEDS CONTROLLED BY SURFLAN AS

Annual Grasses:

Common Name	Scientific Name
barley, little	*Hordeum pusillum*
barnyardgrass (watergrass)	*Echinochloa crus-galli*
bluegrass, annual	*Poa annua*
crabgrass, large	*Digitaria sanguinalis*
crabgrass, smooth	*Digitaria ischaemum*
crowfootgrass	*Dactyloctenium aegyptium*
cupgrass, southwestern	*Eriochloa gracilis*
foxtail, bristlegrass	*Setaria magna*
foxtail, giant	*Setaria faberi*

(continued)

WEEDS CONTROLLED BY SURFLAN AS *(continued)*

Annual Grasses:

Common Name	Scientific Name
foxtail, green (pigeongrass)	*Setaria viridis*
foxtail, robust	*Setaria robusta*
foxtail, yellow	*Setaria glauca*
goosegrass (silver crabgrass)	*Eleusine indica*
Johnsongrass (seedling only)	*Sorghum halepense*
junglerice	*Echinochloa colonum*
lovegrass, Mexican	*Eragrostis mexicana*
lovegrass, orcutt	*Eragrostis orcuttiana*
oat, wild	*Avena fatua*
panicum, browntop	*Panicum fasciculatum*
panicum, fall (spreading panicgrass)	*Panicum dichotomiflorum*
panicum, Texas (buffalograss) (Coloradograss)	*Panicum texanum*
ryegrass, Italian	*Cenchrus incertus*
signalgrass (Brachiaria)	*Brachiaria* spp.
sprangletop, red	*Leptochloa filiformis*
witchgrass	*Panicum capillare*

Broadleaf Weeds:

Common Name	Scientific Name
bittercress	*Cardamine oligosperma*
carpetweed	*Mollugo verticillata*
chickweed, common	*Stellaria media*
fiddleneck, coast	*Amsinckia intermedia*
filaree, redstem	*Erodium cicutarium*
filaree, whitestem	*Erodium moschatum*
groundsel, common	*Senecio vulgaris*
henbit	*Lamium amplexicaule*
knotweed, prostrate	*Polygonum aviculare*
lambsquarters	*Chenopodium album*
pigweed, prostrate	*Amaranthus blitoides*
pigweed, redroot	*Amaranthus retroflexus*
pigweed, spring	*Amaranthus hybridus*
pigweed, tumble	*Amaranthus albus*
puncturevine	*Tribulus terrestris*
purslane, common	*Portulaca oleracea*
pusley, Florida (Florida purslane) (Mexican clover) (pusley)	*Richardia scabra*
rocket, London	*Sisymbrium irio*
rockpurslane, desert	*Calandrinia ciliata*
shepherdspurse	*Capsella bursa-pastoris*
spurge, prostrate	*Euphorbia humistrata*
woodsorrel, yellow	*Oxalis stricta*

WEEDS SUPPRESSED BY SURFLAN AS

Control of the following weeds may be erratic, ranging from poor to excellent, depending upon soil temperature, time of germination, depth of seed in the soil, and amount and timing of soil moisture:

Common Name	Scientific Name
horseweed	*Conyza canadensis*
ladysthumb	*Polygonum persicaria*
lettuce, prickly	*Lactuca serriola*
mallow, common	*Malva neglecta*
milkweed, climbing	*Sarcostemma cynanchoides*
morningglory	*Ipomoea* spp.
mustard, black	*Brassica nigra*
mustard, wild	*Brassica kaber*
nightshade, black	*Solanum nigrum*
ragweed, common	*Ambrosia artemisiifolia*
smartweed	*Polygonum pensylvanicum*
sowthistle, annual	*Sonchus oleraceus*
spurge, spotted	*Euphorbia maculata*
teaweed (prickly sida)	*Sida spinosa*
velvetleaf	*Abutilon theophrasti*
wheat, volunteer	*Triticum* spp.

CROP-SPECIFIC USE DIRECTIONS

ORNAMENTAL PLANTINGS

Surflan AS is recommended for use on certain landscape container- and field-grown established ornamental plants including: trees, shrubs, ground covers/perennials, flowers, non-bearing fruit and nut trees, non-bearing vineyards; and in the production of ornamental bulbs (See "Ornamental Bulbs" section for special use directions).

Broadcast Application Rates

Labeled Use Site	Length of Control	Surflan AS (qt/acre)	Surflan AS (fl oz/1000 sq ft)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
Landscape Ornamentals	2 - 4 months	2	1.5	2	8
	3 - 6 months	3	2.2	4	12
	4 - 8 months	4	3	4	12
Field-grown and container-grown ornamentals	2 - 4 months	2	1.5	3	8
	3 - 6 months	3	2.2	3	9
	4 - 8 months	4	3	3	12

Tank Mix Combinations
Tank mix combinations of Surflan AS plus glyphosate, and many other labeled herbicides may be used to control undesirable vegetation in ornamental areas. Surflan AS may also be tank mixed with Gallery herbicide and applied preemergence to broaden the spectrum of broadleaf weed control in ornamental areas. Applied as directed, these tank mixes of Surflan AS will provide control of susceptible weed species listed on the respective labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

Surflan AS Plus Glyphosate: Tank mix combinations of Surflan AS plus glyphosate are recommended to control existing undesirable vegetation. Applied as directed, Surflan AS plus glyphosate will provide postemergence control of susceptible weed species listed on the label for glyphosate and residual preemergence control of susceptible weed species listed on the label for Surflan AS. Refer to the label for glyphosate for specific use directions, precautions, and limitations before use.

Precautions: Do not apply sprays containing glyphosate over the top of ornamental plants.

Extreme care must be exercised to prevent sprays containing glyphosate from coming in contact with foliage and stems of turfgrasses, trees, shrubs, or other desirable vegetation since severe damage or death may result. If spraying with glyphosate in areas adjacent to desirable plants, use a shield to prevent spray from contacting foliage and stems of desirable plants.

Special Use Precautions:
Apply only to established plants that have been transplanted into their growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation.

Rooted liners should be removed from their original growing containers and placed in new containers at least two weeks prior to treatment or injury may occur.

To avoid possible injury, do not apply Surflan AS to:
- Nursery, forest, or Christmas tree: seedling beds, cutting beds, or transplant beds.
- Unrooted liners or cuttings that have been planted in pots for the first time.
- Pots less than four inches wide.
- Ground covers until they are established and well rooted.
- Ornamental plantings where there is likelihood of runoff onto lawn areas.
- Areas containing dichondra or cool season turfgrass species.

On container grown ornamentals where weed seed germination continues for extended periods of time, do not make repeat applications of Surflan AS for at least 90 days or crop injury may occur.

Applications of Surflan AS over the top of plants with newly forming buds may cause injury. In this situation a directed spray is recommended.

For soils treated with Surflan AS during the previous season, plant only the ornamental species listed on this label or injury may occur.

Ice Plant: When establishing unrooted ice plant on coarse-textured soils in landscape plantings, do not exceed the 2 quart per acre rate of Surflan AS or crop injury may occur.

Note: Injury on the following plant species has been observed following applications of Surflan AS and use is not recommended:

Deutzia gracilis (slender deutzia)
Pseudotsuga menziesii (Douglas-fir)
Thuja occidentalis 'Techny' (Techny arborvitae)
Tsuga canadensis (eastern hemlock)
Begonia spp. (begonia)
Coleus hybridus (coleus)

Surflan AS May be Used on the Following Established Plant Species:
(Note: Limitations on recommended treatment methods).

TREES

Scientific Name	Common Name	Recommended Treatment Method F = Field Grown C = Container Grown
Abies balsamea	Fir, balsam	F
Abies concolor	Fir, white	F
Abies fraseri	Fir, fraser	F
Abies grandis	Fir, grand	F
Abies veitchi	Fir, Vietch	F
Abies lasiocarpa	Fir, alpine	F
Abutilon hybridum	Albus-flowering maple	F
	Luteus-flowering maple	F
	Roseus-flowering maple	F
	Tangerine-flowering maple	F
	Vesuvius red-flowering maple	F
Acer gimmala	Flame maple	F
Acer rubrum	Red sunset maple	F
Acer saccharinum	Silver maple	F
Acer spp.	Maple	F
Alsophila australis	Australian tree fern	C,F
Areacastrum romanzoffianum	Queen palm	F
Betula nigra	Birch, river	F
Betula papyrifera	Paper birch	F
Betula pendula	Birch, white	F
Bucida buceras	Black olive	F
Carya spp.	Pecan, ornamental	C,F
Cedrus, atlantica	Atlas cedar	C,F
Cedrus deodara	Deodar cedar	C,F
Ceratonia siliqua	Carob	F
Cercidium floridum	Palo Verde, blue	F
Cercis canadensis	Redbud	C,F
Chamaecyparis lawsoniana	Falsecypress, Lawson	F
Chamaecyparis obtusa	Filicoides-fernspray cypress	F
	Gracilis-slender Hinoki cypress	F
Chamaecyparis pisifera	Sawara-false cypress	F
	Squarrosa-moss cypress	F
Chamaedorea cataractarum	Cat Palm	F
Chamaedorea costaricana	Palm	F
Chamaedorea elegans	Parlor palm	F
Citrus spp.	Citrus, ornamental	C,F
Cornus florida	Dogwood, flowering	F
Cryptomeria japonica	Cryptomeria, Japanese	C,F
Cupaniopsis anacardioides	Carrot wood	F
Cupressus arizonica (glabra)	Cypress, Arizona	C,F
Cupressus glabra	Arizona cypress	C,F
Cupressocyparis leylandii	Leyland cypress	C,F
Cupressus sempervirens	Cypress, Italian	C,F
Dicksonia antarctica	Tasmanian tree fern	C,F
Elaeagnus angustifolia	Russian olive	C,F
Eucalyptus camaldulensis	Red gum eucalyptus	F
Eucalyptus cinerea	Eucalyptus, mealy	F
	Silver dollar eucalyptus	F
Eucalyptus nicholii	Eucalyptus, narrow-leaved	F
Eucalyptus sideroxylon	Eucalyptus, red ironbark	F
Ficus benjamina	Ficus	F
Fraxinus spp.	Ash	F
Ginkgo biloba	Ginkgo (Maidenhair tree)	C,F
Gleditsia triacanthos	Honey locust	F
Heteromeles arbutiflora	Toyon	F
Juniperus virginiana	Redcedar, Eastern	F
Koelreuteria paniculata	Goldenrain tree	F
Liquidambar styraciflua	Sweetgum, American	C,F
Magnolia spp.	Magnolia	F
Malus spp.	Crabapple	F
Morus alba	White mulberry	F
Picea abies	Pendula-weeping Norway spruce	F
	Repens-spreading Norway spruce	F
	Spruce, Norway	F
Picea englemanni	Spruce, Englemann	F
Picea glauca	Spruce, white	F
	Conica-dwarf Alberta spruce	F
Picea glauca conica	Dwarf Alberta spruce	F
Picea mariana	Spruce, black	F
Picea pungens	Glauca-Colorado blue spruce	F
	Hoopsii-Hoop's blue spruce	F
	Koster-Koster blue spruce	F
	Spruce, Colorado	C,F
Pinus aristata	Bristlecone pine	F
Pinus canariensis	Canary Island pine	F
Pinus contorta	Shore pine, beach pine	F
Pinus eldarica	Eldarica pine	F
Pinus halepensis	Aleppo pine	C,F
Pinus radiata	Monterey pine	F
Pinus spp.	Pine	C,F
Pinus strobus	Eastern white pine	F
Pinus sylvestris	Scotch pine	F
Pinus thunbergiana	Japanese black pine	F
Platanus occidentalis	American sycamore	F
Platanus racemosa	Californa sycamore	F
Podocarpus spp.	Podocarpus	F
Populus deltoides	Cottonwood	F
	Cottonwood (grown for pulp)	F
Prunus caroliniana	Laurelcherry, Carolina	F
Prunus glandulosa	Dwarf flowering almond	C,F
Prunus laurocerasus	Laurelcherry, English	F
Prunus mahaleb	Cherry, Mahaleb	F
Prunus yedoensis	Yoshino flowering cherry	F
Pyrus communis	Pear	F
Quercus palustris	Pin oak	F
Quercus phellos	Willow oak	F
Quercus rubra	Red oak	C,F
Quercus spp.	Oak	C,F
Salix babylonica	Babylon weeping willow	F
	Corkscrew willow	F
Schinus molle	California pepper tree	F
Sequoia sempervirens	Redwood, coast	F
Sequoiadendron giganteum	Giant sequoia	F
Swietenia mahogani	Mahogany	F
Tabebuia caraiba	Yellow tab	F
Tilia cordata	Linden, little leaf	C,F
Ulmus parvifolia	Chinese elm	F
Umbellularia californica	California laurel	F
Washingtonia robusta	Mexican fan palm	F

SHRUBS

Scientific Name	Common Name	Recommended Treatment Method F = Field Grown C = Container Grown
Abelia grandiflora	Glossy abelia	F
Acacia redolens	Acacia, prostrate	F
Agave americana	Century plant	F
Agave macroculmis	Agave	F
Anisodontea hypomandarum	Cape mallow	C,F
Arctostaphylos stanfordiana	Manzanita, Stanford	F
Astilbe chinensis	Astilbe/false spirea	C,F
Baccharis pilularis	Coyotebush	F
Berberis thunbergii	Aurea-golden Japanese barberry	C,F
	Crimson pygmy barberry	C,F
	Atropurea-redleaf Japanese barberry	C,F
	Barberry, Japanese	C,F
Bougainvillea spp.	Barbara Karst	F
	California gold	F
	Scarlet O'Hara	F
	Texas dawn	F
Buddleia davidii	Butterfly bush	C,F
Buxus microphylla	Littleleaf boxwood	F
Buxus microphylla japonica	Boxwood, Japanese	C,F

(continued)

SHRUBS *(continued)*

Recommended Treatment Method
F = Field Grown
C = Container Grown

Scientific Name	Common Name	
Buxus sempervirens	Boxwood, common	C,F
Callistemon citrinus	Bottlebrush, lemon	C,F
Cassia artemisioides	Cassia, feathery	F
Ceanothus americanus	Jerseytea, redroot	C,F
Ceanothus spp.	Wild lilac	C,F
Chaenomeles japonica	Flowering quince	C,F
Chamaecyparis obtusa	Kosteri cypress	F
	Nana-dwarf Hinoki cypress	F
	Torulosa cypress	F
Chamaecyparis pisifera	Squarrosa Minima cypress	F
Chamaecyparis pisifera spp.	Filifera-thread cypress	F
Chrysalidocarpus lutescens	Areca palm	F
Clethra	Summersweet	C,F
Cleyera japonica	Cleyera, Japanese	C,F
Coleonema pulchrum	Pink breath of heaven	C,F
Cornus alba	Sibirica-Siberian dogwood	F
Cornus kousa	Dogwood, kousa	C,F
Cornus stolonifera	Flaviramea-yellowtwig dogwood	F
Cotoneaster adpressus	Praecox-early cotoneaster	F
Cotoneaster apiculatus	Cotoneaster, cranberry	C,F
Cotoneaster buxifolius	Cotoneaster, brightbead	F
Cotoneaster congestus	Cotoneaster, Pyrenees	F
Cotoneaster dammeri	Cotoneaster, bearberry	C,F
Cotoneaster himalayan	Himalayan cotoneaster	F
Cotoneaster horizontalis	Cotoneaster, rock	C,F
Cotoneaster lacteus	Cotoneaster, parney	C,F
Cotoneaster microphyllus	Cotoneaster, rockspray	F
Cotoneaster salicifolia	Willowleaf cotoneaster	C,F
Cytisus praecox	Hollandia-warminster broom	F
Cytisus scoparius	Lena-Scotch broom	F
Dasylirion wheeleri	Sotol, desert spoon	F
Deutzia crenata	Nakiana-dwarf deutzia	F
Dodonaea viscosa	Hopseedbush, clammy	F
	Hopseed bush	F
Escallonia exoniensis	Escallonia	C,F
Euonymus alata	Euonymus, winged	F
Euonymus fortunei	Canadale gold euonymus	C,F
	Emerald'n gold euonymus	C,F
	Euonymus, stringybark	C,F
	Wintercreeper	C,F
Euonymus japonica	Euonymus, evergreen	C,F
	Silver king euonymus	F
Euonymus kiatschovica	Spreading euonymus	F
Euonymus vegetus	Bigleaf wintercreeper	C,F
Fatshedera lizei	Fatshedera	C,F
Fatsia japonica	Japanese aralia	C,F
Felicia amelloides	Blue marguerite	C,F
Forsythia intermedia	Forsythia, border	F
Gardenia jasminoides	Gardenia	C,F
Genista pilosa	Woadwaxen	F
Hibiscus rosa-sinesis	Ross Estey-hibiscus	F
	Hibiscus, Chinese	F
Hibiscus syriacus	Rose of Sharon, Red Bird	F
	Rose of Sharon, Red Heart	F
	Rose of Sharon, Woodbridge	F
	Rose-of-Sharon (Shrubalthea)	F
Hydrangea macrophylla	Hydrangea, French	C,F
Hydrangea quercifolia	Hydrangea, Oakleaf	C,F
Ilex aquifolium	Balkans holly	F
	Gold coast holly	F
	Holly, English	F
Ilex aquipernyi	San Jose holly	C,F
Ilex cornuta	Dwarf Burford holly	C,F
	Holly, Chinese	C,F
Ilex crenata	Compacta-dwarf Japanese holly	C,F
	Convexa holly	C,F
	Helleri-Heller's Japanese holly	C,F
	Holly, Japanese	C,F
Ilex glabra	Nordica-inkberry holly	F
Ilex meserveae	Blue boy holly	F
	Blue girl holly	F
	Ebony magic holly	F
Ilex vomitoria	Nana-dwarf yaupon holly	C,F
	Pendula-weeping yaupon holly	C,F
	yaupon holly	C,F
Juniperus chinensis	Media-old gold juniper	C,F
Juniperus conferta	Emerald sea shore juniper	F
Juniperus horizontalis	Huntington blue juniper	C,F
	Wiltonii-blue carpet juniper	C,F
Juniperus procumbens	Nana-dwarf Japaneses garden juniper	C,F
Juniperus prostrata	Prostrata juniper	C,F
Juniperus sabina	Broadmoor juniper	F
	Foemina-Hicks juniper	F
	Tamariscifolia-Tam juniper	F
Juniperus scopulorum	Emerald green juniper	F
Juniperus spp.	Juniper	C,F
Juniperus squamata	Blue juniper	F
	Blue star juniper	F
	Parsonii juniper	F
Justicia brandegeana	Shrimp plant	C,F
Justicia spicigera	Honeysuckle, Mexican	F
Kalmia latifolia	Laurel, mountain	F
Lagerstroemia indica	Crape myrtle	C,F
Lavandula angustifolia	English lavander	C,F
Leucothoe axillaris	Leucothoe, coast	F
Leucothoe fontanesiana	Leucothoe, drooping	F
Ligustrum amurense	Privet, amur	C,F
Ligustrum japonicum	Privet, Japanese	C,F
	yellow tip ligustrum	C,F
Ligustrum lucidum	Privet, glossy	C,F
Ligustrum ovalifolium	California privet	F
Ligustrum texanum	Howardi privet	F
	Wax leaf privet	F
Ligustrum vicaryi	Privet, golden	C,F
	Vicary golden privet	C,F
Livistona chinensis	Chinese fountain palm	F
Lonicera fragrantissima	Winter honeysuckle	F
Lonicera periclymenum	Flowering woodbine	F
	Serotina woodbine	F
Lonicera sempervirens	Trumpet honeysuckle	F
Lorpetalum chinense	(No common name)	C,F
Mahonia aquifolium	Oregon grape	F
Myoporum parvifolium	Myoporum, prostrate	F
Myrtus communis	Myrtle, true	C,F
Nandina domestica	Compacta-dwarf heavenly bamboo	C,F
	Harbour dwarf-heavenly bamboo	C,F
	Heavenly bamboo (Nandina)	C,F
	Nana compacta-heavenly bamboo	C,F
	Nana purpurea-heavenly bamboo	C,F
	Woods dwarf-heavenly bamboo	C,F
Nerium oleander	Hardy red oleander	C,F
	Oleander	C,F
	Ruby lace oleander	C,F
Osmanthus heterophyllus	Osmanthus, holly-leaf	F
Pachysandra terminalis	Japanese spurge	C,F
Philadelphus spp.	Mockorange	C,F
Phoenix roeloelenii	Pigmy date palm	F
Photinia fraseri	Fraser's photinia	C,F
	Photinia	C,F
Pieris japonica	Lily-of-the-valley	F
	Snowdrift lily-of-the-valley	F
	Temple bells lily-of-the-valley	F
	Valley rose lily-of-the-valley	F
	Andromeda	C,F
Pittosporum spp.	Pittosporum	C,F
Pittosporum tobira	Green pittosporum	F
	Japanese pittosporum	F
	Tobira	F
	Wheeler's dwarf pittosporum	F
Platycladus orientalis	Arborvitae, Oriental	C,F
Plumbago ariculata	Blue cape plumbago	F
Podocarpus macrophyllus	Yewpine	C,F
Potentilla fragiformis	Cinquefoil	F
Potentilla fruticosa	Cinquefoil	C,F
Protea neriifolia	Protea	F
Pyracantha coccinea	Firethorn, scarlet	C,F
Pyracantha fortuneana	Lolendei Monrovia pyracantha	C,F
Pyracantha fortuneana	Monon pyracantha	C,F
	Red elf hybrid pyrcantha	C,F
	Rutgers hybrid pyracantha	C,F
	Santa Cruz pyracantha	C,F
	Victory pyracantha	C,F
Pyracantha skoidzumi	Firethorn, formosa	C,F
Pyracantha, fortuneana	Firethorn	C,F
Rhaphiolepis indica	Enchantress-Moness rhaphiolepis	F
	Rhaphiolepsis (India hawthorn)	C,F
	Springtime-Monme rhaphiolepis	F
Rhaphiolepis ovata	Roundleaf rhaphiolepis	F
Rhipsalidopsis gaertneri	Eastercactus	C,F
Rhododendron calendulaceum	Flame azalea	F
Rhododendron campylocarpum	Butterfly rhododendron	F
Rhododendron carolinianum x daurium	PJM rhododendron	F
Rhododendron catawbiense	Catawba album rhododendron	C,F
	Catawba rhododendron	C,F
	Lord Roberts rhododendron	C,F
	Rocket rhododendron	C,F
Rhododendron forrestii x griersonianum	Elizabeth rhododendron	F
Rhododendron hybrid spp.	America rhododendron	F
	English Roseum rhododendron	F
	Nova Zembla rhododendron	F
	Scintillation rhododendron	F
Rhododendron impeditum	Rhododendron	F
Rhododendron indica	Formosa azalea	C,F
	Waucabusa azalea	C,F
Rhododendron kerume	Coral bells azalea	C,F
	Hino crimson azalea	C,F
	Hino pink azalea	C,F
	Snow azalea	C,F
Rhododendron maximum	Rhodie max (rosebay)	C,F
Rhododendron mucronulatum	Rhododendron	F
Rhododendron satuski	Gumpo pink azalea	F
	Higasa azalea	F
Rhododendron spp.	Azalea	C,F
	Rhododendron	C,F
Rhododendron spp. *hybrids*	Carror azalea	C,F
	Girard Roberta azalea	F
	Golden flare exbury azalea	F
Rhus lancea	Sumac, African	C,F
Rosa rugosa	Ramanas rose	F
Rosmarinus officinalis	Rosemary	F
Senecio cineraria	Dusty miller	C,F

(continued)

SHRUBS *(continued)*

Recommended Treatment Method
F = Field Grown
C = Container Grown

Scientific Name	Common Name	
Spiraea vanhouttei	Bridal wreath	F
Syringa vulgaris	Lilac, common	C,F
Syzygium paniculata	Brush cherry	C,F
Taxus cuspidata	Yew, Japanese	F
Taxus media	Yew	F
Thuja occidentalis	Arborvitae, American	C,F
	Emerald arborvitae	F
	Globosa-globe arborvitae	F
	Little giant-dwarf arborvitae	F
	Nigra-dark American arborvitae	F
	Pyramidalis arborvitae	F
	Rheingold arborvitae	F
	Woodwardii arborvitae	F
Thuja orientalis	Aureus nana-dwarf golden arborvitae	F
	Minima glauca-dwarf arborvitae	F
Thuja plicata	Red Cedar, Western	F
Trachelospermum jasminoides	Star jasmine, Chinese	F
Veitchia merrilli	Christmas palm	F
Viburnum carlesii	Koreanspice viburnum	C,F
Viburnum davidii	David viburnum	F
Viburnum japonicum	Viburnum	F
Viburnum judd (V X Judii)	Viburnum	C,F
Viburnum opulus sterile	Common snowball viburnum	F
Viburnum plicatum tomentosum	Doublefile viburnum	F
Viburnum setigerum	Tea viburnum	F
Virbunum suspensum	Virbumum, Sandankwa	F
Viburnum tinus	Viburnum, Laurustinus	C,F
	Compactum-spring bouquet viburnum	F
Viburnum tinus compactum	Spring bouquet viburnum	F
Viburnum trilobum compactum	Dwarf cranberry bush	F
Viburnum x pragense	Viburnum	F
Weigela florida	Bristol ruby weigela	F
	Java red weigela	F
	Minuet weigela	F
	Weigela, oldfashioned	F
Xylosma congestum	Xylosma	F
Yucca elata	Yucca, soaptree	C,F
Yucca recurvifolia	Yucca, pendulous	F

GROUNDCOVERS/PERENNIALS

Recommended Treatment Method
F = Field Grown
C = Container Grown

Scientific Name	Common Name	
Agapanthus africanus	Lily-of-the-Nile	C,F
Ajuga spp.	Carpet bugle	F
Arctotheca calendula	Cape weed	F
Asparagus retrofractus	(No common name)	C,F
Asparagus varieegata	Tree fern	C,F
Aster novae-angliae	New England aster	C,F
Aster novi-belgii	New York aster	C,F
Athyrium nipponimcum	Japanese painter fern	C,F
Brassica oleracea	Wild cabbage	C,F
Callistepheus chinensis	China aster	C,F
Campanula elatines	Bellflower	C,F
Carpobrotus edulis	Ice plant, largeleaf (see label)	F
Clytostoma callistegioides	Trumpet vine, violet	C,F
Cortaderia selloana	Pampas grass	F
Cuphea hyssopifolia	False Mexican heather	C,F
Delosperma alba	White iceplant	F
Dietes vegeta	Fortnight lily	C,F
Digitalis mertonensis	Foxglove	C,F
Doronicum cordatum	Leopard's bane	C,F
Drosanthemum floribundum	Trailing rosea iceplant	F
Erianthus ravennae	Hardy pampus grass	C,F
Festuca ovina glauca	Blue fescue	F
Gaillardia grandiflora	Blanket flower	C,F
Gazania rigens leucolaena	Gazania, trailing	C,F
Gazania spp.	Gazania	F
Hedera canariensis	Ivy, Algerian	F
Hedera helix	Ivy, English	F
Heliotropium fragrans	Common heliotrope	C,F
Hemerocallis spp.	Daylily	C,F
Hosta lancifoila	Albo-marginata hosta	C,F
Hosta spp.	Lily, plantain	C,F
Heuchera micrantha	Coral bells	C,F
Hypericum spp.	St. Johnswort	C,F
Iberis sempervirens	Evergreen candytuft	C,F
Lampranthus spectabilis	Trailing iceplant	F
Leptospermum scaparium	New Zealand teatree/Manuka	C,F
Limonium perezii	Statice/Sea lavender	C,F
Liriope gigantea	White lily turf	F
Liriope muscari	Lilac beauty lily turf	C,F
	Majestic lily turf	C,F
	Monroe white lily turf	C,F
	Silvery sunproof lily turf	C,F
	Variegated liriope lily turf	C,F
	Big blue lily turf	C,F
Lobelia erinus	Edging lobelia	C,F
Lonicera japonica	Honeysuckle, Japanese	F
Mesembryanthemum crystallinum	Ice plant (see label)	F
Monarda didyma	Bee Balm	C,F
Ophiopogon japonicus	Mondo grass	F
Osteospermum fruticosum	Daisy, trailing African	F
Pachysandra terminalis	Japanese spurge	F
Pennisetum setaceum	Fountaingrass	C,F
Polystichum polyblepharum	Tassel fern	C,F
Sedum brevifolium	Stonecrop	C,F
Sedum kamtschaticum	Stonecrop	C,F
Sedum spurium	Stonecrop, tworow	C,F
Tulbaghia violacea	Society garlic	C,F
Verbena rigida	Veined verbena	C,F
Veronica spp.	Speedwell	C,F
Vinca major	Periwinkle, bigleaf	F
Vinca minor	Periwinkle, dwarf	F

FLOWERS

Recommended Treatment Method
F = Field Grown
C = Container Grown

Scientific Name	Common Name	
Achillea spp.	Yarrow	C,F
Antirrhinum majus	Snapdragon	F
Caladium bicolor	Caldaium, fancy leafed	F
Chrysanthemum spp.	Chrysanthemum	C,F
Mixed Hybrid	Dahlia	C,F
Cladium bicolor	Fancy-leaved caladium	F
Coreopsis lanceolata	Coreopsis	F
Coreopsis verticulata	Threadleaf coreopsis	C,F
Dianthus barbatus	Sweet William	F
Dianthus gratianopolitanus	Cheddar pink	C,F
Dicentra spectabilis	Bleeding heart	C,F
Dimorphotheca spp.	Marigold, cape	F
Echinacea purpurea	Coneflower, purple	C,F
Evolvulus nuttallianus	Blue daze	C,F
Geum quellyon	Geum	F
Gladiolus hortulanus	Gladiolus	F
Gypsophila paniculata	Baby's breath	F
Impatiens wallerana	Impatiens (Busy lizzie)	F
Iris spp.	Iris, bearded	F
Liatris spicata	Blazing star	C,F
Pelargonium hortorum	Geranium	F
Petunia spp.	Petunia	C,F
Portulaca grandiflora	Moss, rose	F
Ranunculus asiaticus	Ranunculus, Persian	F
Rosa spp.	Rose	F
Rudbeckia fulgida	Blackeyed susan	C,F
Rudbeckia hirta	Daisy, gloriosa (black-eyed Susan)	F
Salvia spp.	Salvia (Sage)	F
Stokesia laevis	Aster, stokes	F
Strelitzia reginae	Bird of paradise	F
Tagetes spp.	Marigold	F
Viola wittrockiana	Pansy	F
Zinnea elegans	Zinnia, common	F

NON-BEARING TREES AND VINES

Recommended Treatment Method
F = Field Grown
C = Container Grown

almond	F
apple	F
apricot	F
avocado	F
blackberry	F
blueberry	F
boysenberry	F
cherry, sour	F
cherry, sweet	F
currant	F
dewberry	F
elderberry	F
fig	F
filbert	F
gooseberry	F
grape, American	F
grape, European	F
grapefruit	F
kiwi	F
Kumquat	C,F
lemon	F
loganberry	F
macadamia nut	F
nectarine	F
olive	F
orange	C,F
peach	F
pear	F
pecan	C,F
pistachio	F
plum	F
pomegranate	F
prune	F
raspberry	F
walnut, black	F
walnut, English	F

† Non-bearing plants are defined as those that will not bear fruit for at least one year after treatment.

ORNAMENTAL BULBS

Surflan AS may be applied for control of susceptible annual weeds in ornamental bulbs, e.g., bulbous iris, daffodil (narcissus), hyacinth, and tulip. Apply Surflan AS to the soil surface 2-4 weeks after planting, but prior to the emergence of annual weeds. For fall planted bulbs, apply Surflan AS again in late winter or early spring to weed-free soil surfaces.

Broadcast Application Rates

Time of Application	Soil Texture	Surflan AS (qt/acre)	Surflan AS (fl oz/1000 sq ft)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
Fall	Coarse	0.75	0.5	3	1.5
Fall	Medium and Fine	1.5	1.0	3	2.25
Feb. - March	All Soil Textures	0.75	0.5	3	2.25

Special Use Precautions:
Do not apply to tulip plants that have emerged to a height greater than 3/4 inch.
Do not apply to gladioli corms prior to emergence or less than one (1) inch in diameter.

SHADEHOUSE AREAS

Surflan AS may be applied to drainage areas under benches in open shadehouse-type structures where the natural flow of air is unimpeded. Do not apply in enclosed greenhouses or in enclosed shadehouse-type structures. Do not apply within 3 weeks prior to enclosure of greenhouse or poly-type structures.

CHRISTMAS TREE PLANTATIONS

Surflan AS Alone
Apply Surflan AS as a directed spray to the soil surface or as an overtop spray to established plantings of field grown Christmas tree species, including fir (*Abies* spp.), pine (*Pinus* spp.), and spruce (*Picea* spp.). Follow all instructions provided in the "General Information" section of this label.

Broadcast Application Rates

Length of Control	Surflan AS (qt/acre)	Surflan AS (fl oz/1000 sq ft)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
2 - 4 months	2	1.5	2	8
4 - 8 months	4	3	2	8

Tank Mix Combinations
Tank mix combinations of Surflan AS plus other labeled herbicides may be used as directed or overtop sprays in established Christmas tree plantings. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

Surflan AS Plus Glyphosate: Apply tank mix combinations of Surflan AS plus glyphosate only as directed sprays in Christmas tree plantings. When applied according to use directions, Surflan AS plus glyphosate will provide postemergence control of susceptible weed species listed on the label for glyphosate and residual preemergence control of susceptible weed species listed on the label for Surflan AS. Refer to the label for glyphosate for specific use directions, precautions, and limitations before use.

Special Use Precautions:
Do not apply to Douglas-fir (*Pseudotsuga menziesii).* Do not apply to seedbeds or seedling transplant beds. Apply only to established plants that have been transplanted into their final growing location for a sufficient period of time to allow the soil to be firmly settled around the roots from packing and rainfall or irrigation.

NONCROPLAND AREAS AND INDUSTRIAL SITES

Noncropland Areas - Tank Mix Combinations
Tank mix combinations of Surflan AS plus glyphosate and many other labeled herbicides may be used to control undesirable vegetation in noncropland areas such as roadsides, rights-of-way, etc. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

Broadcast Application Rates

Length of Control	Surflan AS (qt/acre)	Surflan AS (fl oz/1000 sq ft)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
2 - 4 months	2	1.5	2	6
4 - 8 months	4	3	4	12
8 - 12 months	6	4.5	8	12

Industrial Sites - Tank Mix Combinations
Tank mix combinations of Surflan AS plus glyphosate, Spike herbicide, and many other labeled herbicides may be used as overtop sprays to control existing vegetation on industrial sites such as utility substations, highway guard rails, sign posts, and delineators. When applied according to use directions, these tank mixes will provide control of susceptible weed species listed on the respective product labels. Refer to tank mix product labels for specific use directions, precautions, and limitation before use.

WARM SEASON TURFGRASSES

Surflan AS may be applied as a preemergence treatment for control of annual grasses and certain broadleaf weeds in established warm season turf including bahiagrass, bermudagrass, buffalograss, centipedegrass, St. Augustinegrass, zoysiagrass, and established tall fescue growing in warm season areas. Established turf is defined as a dense turf having a well-anchored root system and healthy, vigorous top growth. Use Surflan AS only as a part of a total turf management program that includes good fertilization practices.

Surflan AS may be tank mixed with Gallery herbicide (California registration pending) and applied preemergence to broaden the spectrum of broadleaf weed control in warm season turf. Refer to the label for Gallery for specific use directions, precautions, and limitations before use.

Any cultural practices that disturb the soil, such as aerification or verticutting, should be done prior to application of Surflan AS.

Surflan AS will not control emerged weeds. Successful preemergence control of weeds listed on this label requires that Surflan AS be applied prior to weed germination and be activated by at least one-half (1/2) inch of rainfall or irrigation within 21 days of application.

Surflan AS may injure turf that is not well established or is stressed or weakened due to unfavorable winter climatic conditions, drought, nematodes, or other factors which damage or weaken turf root systems. Apply Surflan AS only to healthy, well-established turf that has a well-anchored root system.

Do not apply Surflan AS in the spring or early summer to tall fescue turfgrass reseeded the previous fall. In such cases, apply Balan 2.5G granular herbicide at 60-80 pounds per acre in early summer (Round 1) and Surflan AS at 1.5 quarts per acre approximately eight weeks later (Round 2). Do not apply Surflan AS at the single application rate (2 quarts per acre) to established tall fescue; in such cases, apply 1.5 quarts per acre of Surflan AS in an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

In bermudagrass areas that have been overseeded with winter grasses, a spring application of Surflan AS will thin the overseeded grasses.

ANNUAL GRASSES CONTROLLED BY SURFLAN AS

Summer Annuals:

Common Name	Scientific Name
barnyardgrass (watergrass)	*Echinochloa crus-galli*
crabgrass, large	*Digitaria sanguinalis*
crabgrass, smooth	*Digitaria ischaemum*
crabgrass	*Digitaria* spp.
crowfootgrass	*Dactyloctenium aegyptium*
foxtail, bristlegrass	*Setaria magna*
foxtail, giant	*Setaria faberi*
foxtail, green (pigeongrass)	*Setaria viridis*
foxtail, robust	*Setaria robusta*
foxtail, yellow	*Setaria glauca*
goosegrass (silver crabgrass)	*Eleusine indica*
Johnsongrass (seedling only)	*Sorghum halepense*
ryegrass, Italian	*Lolium multiflorum*
sandbur, field	*Cenchrus incertus*

Winter Annuals:

Common Name	Scientific Name
bluegrass, annual	*Poa annua*

ANNUAL BROADLEAF WEEDS CONTROLLED BY SURFLAN AS

Summer Annuals:

Common Name	Scientific Name
carpetweed	*Mollugo verticillata*
knotweed, prostrate	*Polygonum aviculare*
purslane, common	*Portulaca oleracea*

Winter Annuals:

Common Name	Scientific Name
chickweed, common	*Stellaria media*
henbit	*Lamium amplexicaule*

BROADLEAF WEEDS SUPPRESSED BY SURFLAN AS

Common Name	Scientific Name
groundsel, common	*Senecio vulgaris*
spurge, prostrate	*Euphorbia humistrata*
woodsorrel, yellow	*Oxalis stricta*

Application Rates, Frequency, and Timing of Application
Surflan AS can be applied in the spring for summer annual grass and broadleaf weed control, and in the fall for annual bluegrass (*Poa annua*) and winter annual broadleaf weed control.

Broadcast Application Rates (Warm Season Turfgrasses)

Use Area	Surflan AS (qt/acre)	Surflan AS (fl oz/1000 sq ft)	Minimum Time Between Applications (months)	Total Amount Allowed Per Year (qt/acre)
All, except Florida	1.5 2	1 1.5	3 3	6 6
Florida	1.5	1	3	4.5

1. Summer Annual Grasses and Broadleaf Weeds

Single Application Program: Apply 2 quarts per acre of Surflan AS in late winter or early spring, prior to the onset of conditions favorable for annual weed germination.

Split Application Program: As an alternative to a single application program, Surflan AS may be applied in a split application. This program is desirable when the initial application is made well in advance of weed germination and where weed control is desired for a longer period of time. Apply 1.5 quarts per acre of Surflan AS in an initial application, followed by a second application of 1.5 quarts per acre 8-10 weeks later.

The second treatment of the split application may follow application of a different preemergence grass herbicide in place of the initial application of Surflan AS.

2. Annual Bluegrass (*Poa annua*) and Winter Annual Broadleaf Weeds

In areas of heavy annual bluegrass infestation, its elimination will result in temporary thinning of turfgrass cover. Proper fertilization, irrigation, and soil incorporated reseeding should be employed to speed the restoration of desirable turfgrass cover in areas previously occupied by annual bluegrass (see section on reseeding).

Apply Surflan AS as a preemergence treatment in late summer or early fall, prior to the expected germination period for annual bluegrass and winter annual broadleaf weeds. If annual bluegrass infestation is severe and its elimination will result in thinning of turfgrass cover, apply Surflan AS at 1.5 quarts per acre. If thinning of turfgrass cover is not a potential problem, Surflan AS may be applied at 2 quarts per acre.

Weed Control in Florida
In Florida, apply 1.5 quarts per acre of Surflan AS three times per year, or every 90-100 days, in the fall, early spring, and early summer. Do not apply more than 1.5 quarts per acre of Surflan AS in any single application.

Application Equipment
Apply Surflan AS evenly over the turfgrass area. Avoid spray pattern skips and overlaps that may result in incomplete coverage or over-application. For best results, use application equipment designed to uniformly broadcast liquid herbicides. Calibrate application equipment prior to use, according to manufacturer's directions. Check equipment frequently to make sure it is working properly and distributing spray uniformly.

Reseeding
Herbicides that control annual weeds may also affect establishment of desirable turfgrass seedlings. Reseeding should be delayed for at least 90-120 days following application of Surflan AS. When reseeding, it is essential that proper cultural practices such as soil cultivation and seedbed preparation, irrigation, and fertilization be followed. For satisfactory reseeding results following use of Surflan AS, the seeding rate should be increased and equipment designed to place seed in full contact with soil (such as the Rogers Aero Seeder) should be employed.

Special Use Precautions:
To avoid possible injury, do not apply Surflan AS to:
- Cool season turfgrass species.
- Golf course putting greens and tees or lawns containing dichondra or cool season turfgrass species.
- Newly sprigged or sodded areas of bermudagrass, St. Augustinegrass, centipedegrass, or zoysiagrass until these turfgrasses are well established and have well-anchored root systems.
- Newly hydromulched areas of bermudagrass until such areas are well established.
- Bermudagrass variety "Sun Turf" when tank mixed with atrazine.

TERMS AND CONDITIONS OF USE

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

WARRANTY DISCLAIMER

United Phosphorus, Inc. (UPI) warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. UPI MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of UPI or the seller. All such risks shall be assumed by buyer.

LIMITATION OF REMEDIES

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at UPI's election, one of the following:
1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

UPI shall not be liable for losses or damages resulting from handling or use of this product unless UPI is promptly notified of such loss or damage in writing. In no case shall UPI be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer and Inherent Risks of Use above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of UPI or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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